APR 22 1952
UNIVERSITY OF WASHINGTON

THE TRAINING SCHOOL BULLETIN

VOLUME 49 APRIL, 1952 NUMBER 2

CONTENTS

PAGE

THE FM CLUB —AN HISTORICAL SKETCH
Walter S. Cornell and Louis Nusbaum - - - - - 17

URGES SUPPORT OF RESEARCH EFFORTS - - - - - - 30

IN MEMORIAM — DR. WILLIAM S. CALCOTT - - - - - 32

RESEARCH HEAD ON ADVISORY BOARD - - - - - - 35

INTRA-SCALE SCATTER FOR TWO KINDS OF MENTALLY DEFECTIVE CHILDREN
Margaret M. Riggs, Ph.D. and Kathryn A. Burchard, M.A. - 36

THE TRAINING SCHOOL AT VINELAND, NEW JERSEY
DEVOTED TO THE INTERESTS OF THOSE WHOSE MINDS HAVE NOT DEVELOPED NORMALLY

THE TRAINING SCHOOL BULLETIN

Published each month (except July and August) by The Training School at Vineland, New Jersey.

Single Copies 15c Yearly subscription (10 Nos.) $1.00

Entered March 14, 1904 at the Post Office, Vineland, N. J., as second-class matter under Act of Congress of July 16, 1894.

The *Training School Bulletin* is published by The Training School at Vineland, New Jersey. It is open to original articles dealing with the aspect of mental retardation. The Editors will consider for publication the following types of material:

1. Articles of a technical nature, e. g., reports of research, discussion of problems in the field.
2. Non-technical articles of general interest, e. g., human interest stories of the mentally retarded, restatements of technical material for the layman.
3. Book reviews and news notes.
4. In special instances republication of important articles having limited distribution.

Authors receive 25 copies of the Bulletin free and may order additional reprints. The author may have to share part of the publication cost of excessive illustrative or tabular material.

Address all manuscripts to: Editor, Training School Bulletin, The Training School, Vineland, N. J. This *Journal* adheres to the conventions concerning bibliographies, citations, preparation of tables and cuts, etc. as described by *J. E. Anderson and W. L. Valentine.* The preparation of articles for publication in the journals of the American Psychological Association, *Psychol. Bull.*, 1944, 41, 345-376.

EDITORS

Walter Jacob, Ph. D.
Karl F. Heiser, Ph. D.
Jack M. MacDonald
Alice Morrison Nash
Marie Keener, B. A.
Bert W. Schmickel

THE FM CLUB

WALTER S. CORNELL
and
LOUIS NUSBAUM

Former Director of Medical Services, Philadelphia Public Schools; member of FM Club since 1908.

Former Associate Superintendent of Schools, Philadelphia; member of FM Club since 1902.

AN HISTORICAL SKETCH

Commemorating the Fiftieth Anniversary

The FM Club, through more than forty-five of its fifty years of existence, has been synonymous in the minds of its "members" with hospitable entertainment at The Training School, particularly at its semi-annual meetings which brought together congenial spirits interested in the problems of mental deficiency. With no designated recording secretary, no permanent records of attendance or programs, and the decease of almost all of its earliest members, much interesting information has been lost. For historical record, Walter Jacob has asked the writers of this article to contribute what they can regarding those early days of this now venerable organization. They have benefitted a great deal from the information and help supplied by Edgar Doll in compiling this record.

According to a statement made to one of us some years ago by Edward R. Johnstone, Henry H. Goddard, Earl Barnes and Johnstone were returning by train from an educational convention, and in their conversation together they unanimously expressed the thought that informal discussions following formal programs had as much value as the programs themselves. Johnstone asked Goddard and Barnes if they could organize a congenial group who would contribute mutually through their discussions, and offered the hospitality of The Training School as a meeting place. Although it is our impression that Earl Barnes was responsible for the thought, the prompt offer by Johnstone of The Training School as a meeting place is an example of the many brilliant concepts followed by execution which marked his long and useful life. In 1902, still a young man, he had recently come to The Training School as its Superintendent, following the death of its founder, Olin S. Garrison.

It is the personal recollection of one of us that the original group consisted of eight or ten men. After the first meeting, held at Vineland, successive meetings were held at the private school of Jesse R. Phillips at Kennett Square, Pa.; The Training School; The Pennsylvania Institute for the Blind at Overbrook, Philadelphia, with its director Dr. Edward E. Allen, as host; The Training School—and always thereafter, The Training School.

The name of the FM (which stands for Feeble Minded) Club also originated with Johnstone and is indicative of his never-failing sense of humor. The girls who waited on table at Maxham Cottage, where routinely lunch was served on the semi-annual meeting days, often referred to the group as "the smokers" and on one occasion it was suggested that the change be made to the title "Smokers' Club" as a protection against injured sensibilities. However, since there was no actual evidence of injured sensibilities—only remote possibility of such a thing and nothing derogatory intended—it was decided to retain the original title which certainly had interesting connotations.

The Training School

In the early days of the Club, the automobile was still in its infancy. Travellers boarded the 8:32 a. m ferry at Market Street wharf, Philadelphia, and on the Camden side of the river took the train for Millville which stopped at Vineland about 10:30. Here a team from The Training School awaited them at the station. In those days there was train service of a kind all the way from New York to Vineland via the Central Railroad of New Jersey—now carrying freight only south of Winslow Junction. We recall the arrival at Vineland of a Canadian physician after a long five-hour ride. The roads were gravel surfaced and, comparatively speaking, were good although hard on tires. Dr. Oliver P. Cornman, Dr. Louis Nusbaum and Dr. Walter S. Cornell used to attend the early meetings making the trips in Cornman's Stanley steamer. A stop at a roadside stream, just south of Woodbury, was necessary to replenish the water in the boiler.

In the first twenty years of this century, The Training School developed at an amazing rate. There was constant progress in its interior organization, its relations with the Vineland neighborhood, its contacts with numerous local and state agencies, and its association with other workers and institutions in the field of mental deficiency.

The school department was set up under the able direction of Alice Morrison (now Mrs. C. E. Nash). Dr. Henry H. Goddard was induced to leave the West Chester State Teachers College (of which he was a faculty member when the FM Club was formed), and organize the new Training School Laboratory of Psychology and Research. Summer classes for the special training of teachers were instituted and continued for many years. Experts from various state agencies demonstrated the growing of alfalfa, overhead irrigation, better peach orchards, better poultry methods, and better dairying. These forward movements enhanced the reputation of The Training School, helped the farmers of the county, and stimulated the growth and development of the town of Vineland.

To solve the problem of finding useful and profitable labor for able bodied young men of poor social competence, a 1400 acre tract of brush land at Menantico, a few miles distant from The Training School, was purchased for about ten dollars an acre. Frank Merithew ("Meri," or "Merrie") was installed as manager. First clearing of the land was accomplished with much stump pulling, making way for an excellent farm.

Johnstone became increasingly interested in the activities of the various State departments and came to be regarded as a valuable advisor. He assumed the title of Director and C. Emerson Nash ("Ted") was promoted from assistant superintendent to superintendent, and continued to be Johnstone's right hand man through the years. We recall a remark made to Johnstone by Professor Whipple of Cornell, that he had found when travelling in Germany that the title of "Direktor" opened all doors, and so he had had his professional cards printed accordingly.

The Psychological Laboratory

The Laboratory for Psychological Research, set up by Goddard on his arrival in the year 1906 from West Chester State Teachers' College, became widely known because of Goddard's publication of the Binet-Simon intelligence tests, translated from the French by his assistant, Miss Elizabeth S. Kite. Shortly afterward, again ably assisted by Miss Kite, Goddard published the history of "The Kallikak Family" which supplemented or complemented the already well-known history of "The Jukes Family," reported by Dougdale. The result was a greatly increased interest in the subject of hereditary

EARLY PICTURE OF FM CLUB

Front row: Crafts, Warren, Baldwin, Jones, McCallie, Goddard. *Second row*: Nusbaum, Burritt, Melville, Bingham, Doll, Fels. *Third row*: Cornell, Burnham, Barnes, Phillips, Cornman, Mackey. *Fourth row*: Kneeland, McComas, Slaughter, Johnstone.

transmission of mental deficiency. The Laboratory staff was increased, principally for purposes of psychological research, but including the biochemist, Amos Peters, and the neuro-pathologist, Dr. William J. Hickson. Goddard devised the term "moron" to signify a relatively high level of mental deficiency, thus clarifying the meanings of the terms used for the lower grades. Together with Johnstone and Mrs. Nash, he helped to conduct the summer classes for the training of teachers working with mentally deficient children.

Stanley D. Porteus succeeded Goddard when the latter went to the Ohio Bureau of Juvenile Research (and later to Ohio State University). Porteus held the position from 1919 to 1925.

In 1925, Edgar A. Doll, who had been a junior member of the Laboratory staff, succeeded Dr. Porteus, and embarked on a long series of research studies. Probably the best known of these are the Vineland Social Maturity Scale, and his investigations in the field of cerebral paralysis—the latter with the assistance of Dr. Winthrop M. Phelps, J. T. McIntire, and others. Doll retired in 1949. In 1951, Dr. Karl F. Heiser was appointed as his successor and is the present Coordinator of Research at the Laboratory.

The FM Club

Contemporaneous with these major advances in the work of The Training School and the research studies made in the Laboratory, the FM Club provided a means of social and professional intercourse between educators, psychologists, physicians, and sociologists. Members of the Laboratory staff attended the meetings more or less intermittently, according to the nature of the programs. While much of the programs related directly to mental deficiency, as encountered and studied by geneticists, endocrinologists, social workers, educators, and jurists, there was always time to look around The Training School, and observe the new buildings, new farm crops, and new live stock. Often a meeting would derive much of its professional value from contributions made by a guest, furnishing a new viewpoint. But, generally speaking, the interests of the meetings centered on research projects being conducted by the Laboratory, and on new projects of special concern to various members in their own home areas. Also it should be said that those attending the Club meetings, often connected with the various New Jersey state agencies and institutions came to know each other better with the formation of solid friendships.

The semi-anual meetings, held usually in April and in October, have afforded, through the years, an opportunity to journey through the New Jersey countryside, to dip (or splash) in the Pierian spring of the arts and sciences, to renew old friendships, to hear new jokes, and to enjoy a never failingly excellent luncheon. The apple pie, the peaches, and the cigars, have helped to numb the memories of the writers so that they have not done justice to the scientific aspects of the meetings. 'Twas so (a least the apple pie) in the first Garden of Eden, which we think looked much like south Jersey does now on a nice spring day.

It is difficult to describe briefly the past and present membership of the Club. The writers think that C. Emerson (Ted) Nash and Louis Nusbaum are the survivors of the original group (1902) and that Walter S. Cornell (1908) is next in seniority. Three or four very early members, who have not attended for years because of distance or ill health, are still living. Members of at least twenty-five years standing include Ted Nash, Frank Merithew, George B. Thorn, Louis Nusbaum, and Edgar A. Doll, and there may be others.

EDITORS' NOTE: The authors have listed in the ensuing paragraphs more than 130 names of members and guests who attended FM Club meetings through the years. Every effort has been made in the few days before press time to check names and dates. The authors and editors realize that there will be errors and omissions; that data on former and present positions, addresses, and titles may not be entirely accurate. Some members, not listed as deceased, may have passed away. Hence, the authors and editors ask the help of readers of The Bulletin concerning names and additional information concerning any phase of this article. Please write to: Editors, The Bulletin, The Training School, Vineland, N. J.)

ATTENDANCE BEGAN 1902 to 1920:

Edward E. Allen, Superintendent, Overbrook School for the Blind. Philadelphia.

E. E. Arnade, Boys Supervisor, Vineland Training School; later Vineland Training School Hospital Supervisor.

Bird T. Baldwin, Psychologist, Swarthmore College; later University of Iowa (deceased).

Earl Barnes, author and lecturer, New Hartford, Conn.

Carl C. Brigham, Department of Psychology, Princeton University (deceased).

Francis Burke Brandt, Principal, School of Pedagogy, Philadelphia Public Schools.

James T. Bryan, Superintendent of Schools, Camden, N. J.

Smith Burnham, Professor of History, West Chester State Teachers College, Pa.

Olin Burritt, Superintendent, Overbrook School for the Blind, Philadelphia.

Joseph P. Byers, social worker; Executive Secretary, National Committee for Provision for the Feebleminded.

Walter S. Cornell, M. D., Director of Medical Services, Philadelphia Public Schools (retired).

Oliver P. Cornman, Associate Superintendent of Schools, Philadelphia.

Henry A. Cotton, M. D., Medical Director, Trenton State Hospital, Trenton, N. J.

Fulton Cutting, New York philanthropist; Trustee, Vineland Training School.

Dr. Calvin Derrick, Superintendent of the State School for Delinquent Boys, Jamesburg, N. J.

Edgar A. Doll, Director, Psychological Laboratory, Training School (1929-1949); now Coordinator of Research, Devereux Schools, Devon, Pa.

Maurice Fels, manufacturer, philanthropist, Philadelphia (deceased).

Samuel S. Fels, manufacturer, chief financial supporter of Psychological Laboratory, Philadelphia (deceased).

Frank A. Fetter, Professor, Department of Sociology and Economics, Princeton University.

Henry H. Goddard, Director, Psychological Laboratory, Training School (1906-1918); later Professor of Psychology, Ohio State University (1922-1938); retired, 508 E. Arrellaga St., Santa Barbara, California.

Milton Greenman, Director, Wistar Institute of Anatomy, University of Pennsylvania.

Walter Haviland, headmaster, Friends Select School, Philadelphia.

Alexander Johnson (brother-in-law of Edward R. Johnstone), Secretary, National Conference of Social Work; later Director of Extension, Training School.

Edward R. Johnstone, Director of The Training School and president of the FM Club until his death in 1946.

Carl Kelsey, Professor of Sociology, University of Pennsylvania.

Edwin Walter Kemmerer, Professor of Economics, Princeton University.

Burdette Lewis, Commissioner of Corrections, Japan (former State Commissioner of Institutions and Agencies, New Jersey).

Daniel Lewis, manufacturer; Trustee, Vineland Training School.

James P. Lichtenberger, Professor of Sociology, University of Pennsylvania.

David A. McCabe, Professor, Department of Sociology and Economics, Princeton University.

J. M. McCallie, Principal, Franklin School, Trenton, N. J.

H. C. McComas, Professor of Psychology, Princeton University; now in Baltimore, Maryland.

Frank McComber, first Superintendent, State Colony, New Lisbon, N. J.

Clinton P. McCord, M. D., now Albany, N. Y.

Ebenezer Mackey, Superintendent of Schools, Trenton, N. J.

Norbert J. Melville, Professor of Psychology, Philadelphia Normal School.

Frank G. Merithew, Manager, Menantico Colony, Training School (retired).

C. Emerson (Ted) Nash, Superintendent, The Training School.

Louis Nusbaum, Associate Superintendent of Schools, Philadelphia (retired).

Jesse Phillips, educator, private school, Kennett Square, Pa.

Edward R. Reed, President, Camden Board of Education; Trustee, Vineland Training School.

Samuel C. Schmucker, Professor of Natural Sciences, West Chester Teachers College, Pa.

George B. Thorn, Superintendent, Vineland State School (retired).

Bleeker Van Wagenen, New York banker, philanthropist; Trustee, Vineland Training School.

Howard C. Warren, Professor of Psychology, Princeton University (deceased).

Dr. David Weeks, Superintendent of The Village of Epileptics, Skillman, New Jersey.

ATTENDANCE BEGAN 1920 to 1940:

Joseph Alloway, Executive Director, Board of Child Welfare, N. J.

Robert M. Beechley, Assistant Superintendent, New Jersey Training School, Totowa; now State Department of Institutions and Agencies.

Dr. Charles W. Berry, Associate Professor of Education, University of Michigan.

John Bosshart, Commissioner of Education, New Jersey.

Howard I. Branson, manufacturer; President, Board of Trustees, The Training School (deceased).

Dr. Sidney A. Cook, Rutgers University (deceased).

Leland W. Crafts, Professor of Psychology, New York University.

Joseph R. Deacon, Boys' Supervisor, Training School; now Assistant Superintendent, State School, Coolidge, Arizona.

William J. Ellis, Commissioner, State Department of Institutions and Agencies, New Jersey (deceased).

H. T. Ennis, Superintendent, Delaware Colony, Stockley, Delaware.

Emil Frankel, Director, Statistics and Research, State Department of Institutions and Agencies, New Jersey.

Francis Garver, University of Pennsylvania.

Dr. Arnold Gessel, Director, Psycho-Clinic, Yale University.

Captain George Giger, Superintendent, Soldiers Home, Menlo Park,.

James D. Jackson, Psychologist, N. J. State Prison, Trenton, N. J.

Charles Jochem, Superintendent, School for the Deaf, Trenton, N. J.

Carroll T. Jones, Superintendent, State Colony, New Lisbon, N. J.

Edward R. Johnstone, Jr., Superintendent, State Colony, Woodbine, New Jersey.

George Kreezer, Professor of Psychology, Washington University, St. Louis, Mo.

J. T. McIntire, Superintendent, Arizona State School, Coolidge, Ariz.

Dean Walter T. Marvin, Rutgers University. (deceased.)

Alfred H. Meese, Superintendent, North Jersey Training School, Little Falls, N. J.

Anthony Mitrano, Psychologist, Training School (1936-1938); now in private practice, Washington, D. C.

Stanley D. Porteus, Director, Psychological Laboratory, Training School (1919-1925); retired, Honolulu, T. H.

1951 MEETING OF FM CLUB

Front row: Delp, McComsey, Nash, Wood, Robbins, Strahan. *Second row*: Heiser, Jackson, Cornell, MacDonald, Jacob, Murphy. *Third row*: Davis, Yepsen, Keener, Graham, Conard, Whitney. *Fourth row*: Renne, Janes, Jones, Gens, Stull, Nusbaum. *Fifth row*: Thorn, Walker, Taubman, Clark, Gordon, Kahn.

Dr. Daniel S. Renner, Assistant Superintendent, The Village for Epileptics, Skillman, N. J.

Max Rockhill, State Department of Institutions and Agencies, N. J.

Ernest N. Roselle, Superintendent, Southbury Training School, Southbury, Conn.

Sidney Sanderson, Professor of Psychology, Rutgers University.

Roy Schaffer, Assistant State Commissioner of Education, New Jersey.

Spencer Smith, State Department of Institutions and Agencies, N. J.

George S. Stevenson, M. D., National Committee for Mental Hygiene, New York.

Dr. Alvin D. Stultz, Pathologist, Vineland State School.

John Tinsley, Superintendent, State Colony, Woodbine, N. J.

Edwin Van Deusen, M. D., Physician, Vineland, N. J.

Harry Von Bulow, Assistant Superintendent, New Jersey State Colony, Woodbine, N. J.

Henry R. Walton, Superintendent, State Colony, New Lisbon, N. J.

E. A. Whitney, M. D., Superintendent, Elwyn Training School, Elwyn, Pennsylvania.

Dr. LeRoy Wilkes, Director, Medical Inspection, Public Schools, Trenton, N. J. (died about 1940).

Griffith W. Williams, Professor of Psychology, Rutgers University.

Richard Wills, State Department of Institutions and Agencies, N. J.

Lawrence Winchell, M. D., Cumberland County Superintendent of Schools, Bridgeton, N. J.

Lloyd N. Yepsen, Director, Division of Classification and Education, Department of Institutions and Agencies, New Jersey.

ATTENDANCE BEGAN 1940 to 1951:

Herman D. Arbitman, Psychologist, The Training School, Vineland.

James Atkinson, M. D., State Colony, New Lisbon, N. J.

Frank Bakes, Department of Psychology, University of Pennsylvania.

Sanford Bates, Commissioner, Department of Institutions and Agencies, New Jersey.

Emmett A. Betts, Department of Education, Temple University.

Lovell Bixby, Deputy State Commissioner, Institutions and Agencies, New Jersey.

Robert A. Brotemarkle, Director, Psychological Laboratory, University of Pennsylvania.

Edgar Bunce, President, State Teachers College, Glassboro, N. J.

Parker Davis, Department of Psychology, Rutgers University.

Harold A. Delp, Coordinator of Educational Activities, The Training School, Vineland.

A. L. Donley, Supervising Principal of Schools, Vineland, N. J.

Nathan Einhorn, M. D., Philadelphia.

Edmund Farris, M. D., Wistar Institute of Anatomy, University of Pennsylvania.

Edward L. French, Berwyn, Pa.

George W. Gens, Director of Special Education, State Teachers College, Newark, N. J.

Alfred F. Glixman, Chief Psychologist, The Training School, Vineland.

Hans Gordon, Director of Special Education, Philadelphia Public Schools.

S. D. Gosman, M. D., Vineland, N. J.

Daniel F. Graham, Assistant Superintendent, The Training School.

Roy Heath, Department of Psychology, Princeton University.

Karl F. Heiser, Coordinator of Research Activities, The Training School

J. Q. Holsopple, Chief Psychologist, New Jersey State Department of Institutions and Agencies; now Chief, Clinical Psychology Section, Veterans Administration, Central Office, Washington, D. C.

Thomas Hopkins, A. Harry Moore School, Jersey City, N. J.

Richard H. Hungerford, Mansfield State Training School, Mansfield Depot, Conn.; now Supervisor of Special Classes, New York City.

Andrew D. Hunt, Jr., M. D., Children's Hospital, Philadelphia.

Francis W. Irwin, Professor of Psychology, University of Pennsylvania

Walter Jacob, Director, The Training School, Vineland.

Paul Janes, Director of Special Services, Court House, Camden, N. J.

Douglas L. Johnstone, Supervisor of Property, The Training School.

Harris Kahn, Psychologist, State Colony, New Lisbon, N. J.

Thomas B. Keener, Business Manager, The Training School.

St. Alban Kite, Parole Supervisor, New Jersey State Department of Institutions and Agencies.

Fred Klauminzer, Superintendent, Vineland State School.

J. M. MacDonald, Director of Public Relations, The Training School.

Douglas P. Murphy, M. D., Professor of Gynecology, University of Pennsylvania.

Henry E. Renne, Farm Supervisor, The Training School.

Chester Robbins, Assistant State Commissioner of Education, Trenton, N. J.; Trustee, The Training School.

Charles A. Strahan, Strahan Teachers Agency, Trenton, N. J.

Mason A. Stratton, Atlantic City, N. J.

C. Edward Stull, Psychologist, The Training School.

Robert E. Taubman, Psychologist, The Training School.

W. B. Timmerman, Psychologist, The Training School; now Mental Hygiene Clinic, Washington, D. C.

Sylvan S. Tompkins, Department of Psychology, Princeton University.

H. Burton Walker, M. D., Visiting Physician, The Training School.

James S. Wittman, Jr., Manager, Menantico Colony, The Training School.

The passage of time brings new faces, and new problems for solution. The FM Club now enters into its second half century. To the younger men who now constitute the majority of the Club's members, and to their leaders, Walter Jacob and Karl Heiser, the writers extend their best wishes for a long continued and happy association.

PENNSYLVANIA STATE COLLEGE COORDINATED CONFERENCES IN EDUCATION

The Pennsylvania State College announces the fifth in a series of Coordinated Conferences in Education to be held on the college campus, June 23 to June 27.

The purpose of the Coordinated Conference is to bring together workers in the fields of art education, audio-visual education, language arts, psychology, special education, and speech education to share their common interests and concerns. Each conference offers the services of local, state, and national workers.

For further information, write Dr. Charles M. Long, School of Education, Pennsylvania State College, State College, Pennsylvania.

URGES SUPPORT OF RESEARCH EFFORTS TO HELP PREVENT MENTAL RETARDATION

"Mentally retarded persons need not be a loss to society; many of them can be taught useful work," Dr. Walter Jacob, director of The Training School told an audience of nearly 600 persons in the Norwalk, Conn., high school auditorium on Tuesday evening, February 26.

Teachers, parents, and civic leaders from Norwalk and surrounding communities were present for the program which was sponsored by the Norwalk Teachers' Association. Dr. Jacob's talk dealt with local and national problems of mental deficiency as it relates to retarded children, their parents, and the communities in which they live.

Ruth White, president of the Norwalk teachers group, presided. Helen Patterson, elementary supervisor of Norwalk schools, headed the committee which arranged the program. Benjamin Isenberg, of the association's Education Committee, introduced Dr. Jacob.

"Mental retardation is not a disease," Dr. Jacob said. "It results from brain injury or lack of brain growth. It is now estimated that approximately half of our mentally retarded children are born to normal and superior parents. One of the major problems is objective diagnosis between 'inherited and non-inherited' types."

The speaker pointed out that there is a wide range in degrees of mental retardation. "It is important to detect mental retardation at the earliest age possible; then to help parents face the future realistically so that the full capacities of the child can be realized with hope — not with despair."

Speaking of the vast need for continuing research, Dr. Jacob said: "There are many unsolved problems in this field—problems not only for the psychologist and educator but for neurologists, pediatricians, bio-chemists, and others. All of us must stimulate and support research in this field. Much of our research at Vineland has been directed toward *prevention* of mental deficiency—toward

the elimination of many of its causes. Studies we have made in heredity, blood chemistry, metabolism, birth injury, cerebral palsy, mongolism, mental growth and measurement have added vastly to our knowledge during the past 50 years."

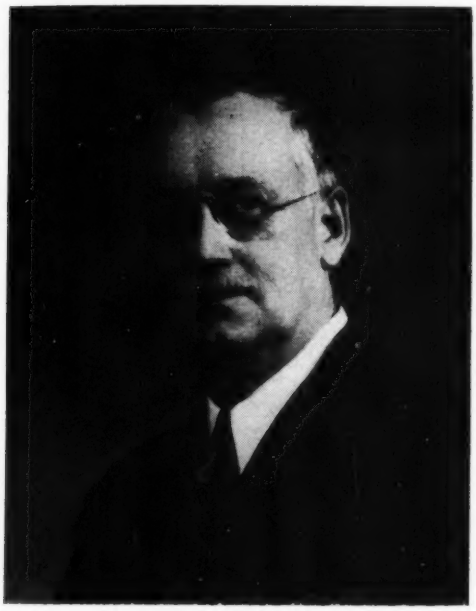
Coordination of effort and national planning is needed, the speaker said, to help the work of communities like Norwalk which are trying to lead the way. "Scientific centers and teachers must work together," he said. "Every experiment in special education classes, every clue as to how these children can be trained more fully is important. From such reports, specialized centers like The Training School can gain tremendous help. There is much at stake, for this problem strikes every community. Only through united effort by all of us will we realize our goal."

Among the special guests were teachers, PTA members and club groups from Westport, Darien, Greenwich, Stamford, Bridgeport, New Canaan, Fairfield, and Wilton.

Morris Feld of New York and W. Carl Walton of West Orange, N. J., officials of the Parents Association of The Training School were present for the meeting.

Following Dr. Jacob's talk there was a question-and-answer period during which the speaker answered many individual questions. An exhibit of the training and vocational work at the Vineland school was set up in the lobby of the auditorium to illustrate phases of work done by children at The Training School.

In Memoriam



Dr. William S. Calcott

Dr. William S. Calcott of Woodstown, N. J., vice president of the Board of Trustees of The Training School, died February 15 in the Graduate Hospital of the University of Pennsylvania after a long illness.

He was special assistant to the director of the technical section of the Du Pont Company's Organic Chemical Department at the time of his death, and was recognized as one of the nation's leading research chemists.

As a trustee of The Training School since 1942, Dr. Calcott took a very active interest in the school's growth and development and was a member of the Property committee and the Fund Raising committee. He was widely known and highly regarded throughout the entire Vineland area.

Dr. Calcott was born on December 13, 1892, at Norfolk, Va. He attended public schools there and was graduated from the University of Virginia in 1913 with a bachelor of science degree in chemical engineering.

He joined the Chemical Department of the Du Pont Company in 1915 as a research chemist at the Experimental Station, and two years later was assigned to the Dye Works (now the Chambers Works) Deepwater Point, N. J. In 1918, he went to the Jackson Laboratory and while there became successively head of the General Organic Division in 1919, assistant director in 1929 and director in 1931. In 1943 he was promoted to assistant chemical director in charge of development, and in 1951 was named special assistant to the director of the Technical Section.

Chief among the many research investigations carried out under Dr. Calcott's direction were indigo research, properties of materials for chemical plant equipment, the development of methods of analysis for organic mixtures, and the development of a process for the manufacture of tetraethyl lead. The latter, in which he collaborated with such prominent men as Thomas Midgely and Charles Kettering, proved to be one of his most outstanding contributions.

Another development in which he played an active part was that of neoprene. It was through this that he established a close friendship with the late Father J. A. Nieuwland, the University of Notre Dame chemist, whose fundamental studies on acetylene paved the way for the development of this new elastomer which was the first general purpose synthetic rubber to be produced commercially in this country.

His continuing interest in the affairs of the University of Notre Dame was rewarded in 1937 when that institution awarded him the degree of L. L. D.

Dr. Calcott was awarded a certificate from the Office of Scientific Research and Development for his contributions during World War II, and also received the Modern Pioneer Certificate from the National Association of Manufacturers. In addition to his membership on the Advisory Council for Science and Engineering at the University of Notre Dame, he served on the Chemistry Advisory Committee of Rutgers University.

A large number of patents have been granted on Dr. Calcott's inventions in the field of chemical research. He has also published numerous technical articles and books.

A resident of Woodstown, N. J., Dr. Calcott was a member of the Salem County Historical Society, the Woodstown "Curtain Call Club," and the U. S. Power Squadron.

Dr. Calcott is survived by his widow, the former Henrietta Cooper Wood, who is also active in the work of The Training School; his mother, Mrs. Alexander O. Calcott; a sister, Miss Emily S. Calcott; and three brothers, Donald S., John W., and Cmdr. Alexander W. Calcott. All except his widow are living at Norfolk, Va.

Dr. Calcott's active interest in many aspects of chemistry was reflected in the many societies of which he was a member: American Chemical Society, American Institute of Chemical Engineers, Society of Chemistry and Industry, American Association for the Advancement of Science, the Chemical Society of London, American Institute of Chemists, Franklin Institute, American Petroleum Institute, Army Ordnance Association, Chemical Warfare Association, Alpha Chi Sigma, Phi Beta Kappa, Sigma Xi, and Tau Beta Pi, and many others. During the war, he worked for Division 9 of the National Defense Research Committee and the Manhattan District project and served from March to June, 1945, in Germany, receiving a group citation from General Somervell.

TRAINING SCHOOL RESEARCH HEAD ON ADVISORY BOARD

Dr. Karl F. Heiser, coordinator of research at The Training School, Vineland, N. J., has been named by the New Jersey Psychological Association as chairman of a new advisory committee on research to help mentally retarded children.

The committee was named by the NJPA at the request of Lee J. Marino, president of the New Jersey Parents Group for Retarded Children. Serving with Dr. Heiser are Dr. Elizabeth Kelley, Newark; Dr. Eloise Oxtoby, North Jersey Training School; Dr. Maurice Kott, Trenton State Hospital; Dr. Kermit Oberlin, Elizabeth; Dr. Anna S. Starr, Rutgers University; and Dr. Warren Findley, Princeton University. This committee will study and select research plans for recommendation to the New Jersey parents' group.

Dr. Heiser also serves as chairman of the Committee on Practicum Training for the American Psychological Association. This committee is responsible for the evaluation of work and development of standards in some 300 hospitals, institutions, and clinics throughout the country.

Early last month, Dr. Heiser served as consultant on internships and practicum training in clinical psychology at a meeting held at Albany, N. Y. This meeting was attended by representatives of the New York state welfare, health, education, correction, and budget departments. Other consultants serving with him were Dr. G. R. Wendt of the University of Rochester and Dr. John C. Eberhart of the U. S. Public Health Service.

INTRA-SCALE SCATTER FOR TWO KINDS OF MENTALLY DEFECTIVE CHILDREN

MARGARET M. RIGGS, Ph.D.
and
KATHRYN A. BURCHARD, M.A.

Research Department
The Training School
Vineland, New Jersey

There have been many studies of degree (1) and pattern (6) of scatter among various clinical groups. Most of the literature has been concerned with either range of ability in terms of year levels covered on the Binet, or patterns of ability as shown by greater success on one kind of test item than on another. This study is concerned with a new approach to the problem of test-scatter.

If a set of items, all purporting to measure roughly the same thing, are scaled in order of difficulty from easy to hard, it is expected that a person will not fail an easy item and pass a harder one, unless the true order of difficulty has been wrongly specified[1]. However, every clinician is aware that such inconsistent performance is not at all rare; we will term this sort of performance *intra-scale scatter* to distinguish it from the two conventional types.

Subjects with organic brain damage typically show very uneven test performance. Mentally defective subjects, on the other hand, have been considered to show relatively low scatter (3, p. 983). Other investigations (7) (8) have shown that it is a mistake to consider mental defectives as a homogeneous group; in particular, there are differences between the intellectual performance of those with familial etiology and those with organic brain damage of non-hereditary origin.

With these studies in mind, the following hypothesis was formulated: *intra-scale scatter will be significantly more frequent among mental defectives with organic etiology than among those with familial etiology.*

If the prediction is verified, this new concept of scatter would seem to deserve attention as a research tool. In addition, the results will be of importance to the concept of subtypes in mental deficit.

1. Of course an order of difficulty which was 'true' for a given sample might not be appropriate for another sample dissimilar in some crucial way. Items dealing with ships, for example, might be disproportionately hard for inland subjects.

A. PROCEDURE:

E. A. Doll revised the order of items within the 1916 Stanford-Binet for local use so that some of the usual alternates became part of the regular scale, while other items replaced them as alternates. Over many years Doll's form of the scale has been used at The Training School at Vineland for the periodic re-evaluation of each child. For the purposes of this study, items in the year levels III through XIII-XIV were grouped into 13 mutually exclusive sub-scales;[2] the items in each sub-scale tend to measure the same sort of function. Within each of the sub-scales, the items were arranged in order of difficulty according to year levels. When there were two items from the same year level, they were placed in the order which gave the fewest possible inconsistent passes within the total group of subjects.

Table I shows these sub-scales and the order of the items within them. While they have no established statistical validity (Cf. McNemar's (4) factorial study of the 1937 Binet), nevertheless these sub-scales provide a basis for studying intra-scale scatter in our population. Whenever a subject fails an earlier item and passes a later one, he is credited with an instance of intra-scale scatter, hereafter to be referred to as a *skip*. For example, (sub-scale No. 5) Johnny Jones might fit triangles together (the Patience item at Yr. V) but fail to copy a square (Yr. IV). He would have *one skip*. If he also passed copying a diamond at Yr. VII he would be credited with a *second skip*, since Diamond is usually more difficult than that item also. Thus within any one sub-scale a subject may have several skips.

All the Binets given each subject since admission were tabulated. The *number of skips per subject* is the number of *different* skips he had throughout all his tests. Skips that were repeated for the same items year after year are thus *only counted once*.

B. SUBJECTS:

For the familial subjects, one or more members of the immediate family had been reliably diagnosed as mentally defective, or showed more than two years retardation in school, and there

2. Vocabulary was omitted since it forms a scale in itself, in a sense. One alternate, the 'age' question of Yr. V, was included, since it had been administered frequently; other alternates were not used since they were rarely given. The President-King item of Yr. XIII was omitted because our subjects usually haven't the requisite information. Items were grouped into scales on the basis of the author's best judgment concerning the essential intellectual processes required for passing each item.

TABLE I
SUB-SCALE GROUPINGS FOR THE 1916 STANFORD-BINET

SUB-SCALE	Year Level	ITEMS
No. 1. Level of definition	III	Naming familiar objects
	V	Giving definitions in terms of use
	VIII	Giving definitions superior to use
	XI	Defining abstract words
No. 2 Likeness and difference	VII	Giving differences
	VIII	Giving similarities; two things
	XI	Giving similarities; three things
No. 3 Gestalt perception	IV	Comparison of lines (length)
	IV	Discrimination of forms
	VI	Finding omissions in pictures
No. 4 Sensory discrimination	V	Comparison of weights
	IX	Arranging 5 weights
No. 5 Visual-motor performance	IV	Copying a square
	V	The game of patience (fitting triangles)
	VII	Copying a diamond
	X	Drawing designs from memory
No. 6 Memory plus ideational reversal	VII	Repeating 3 digits reversed
	IX	Repeating 4 digits reversed
	XI	Repeating 5 digits reversed
No. 7 Rote memory	III	Repeating 3 digits
	IV	Repeating 4 digits
	VII	Repeating 5 digits
	X	Repeating 6 digits
	XIII	Repeating 7 digits
No. 8 Interpretation of	III	Enumeration of objects in pictures
	VII	Description of pictures
presented situations	X	Detecting absurdities (verbal)
	XI	Interpretation of pictures
	XI	Interpretation of fables
	XIII	Problems of fact
No. 9 Knowledge of conventional adaptive response	IV	Comprehension (personal needs)
	VI	Comprehension (obstacles)
	VIII	Comprehension (others' viewpoint)
	X	Comprehension (motives and plans)
No. 10 Goal-directed ideation	V	Aesthetic comparison
	V	Three commissions
	VIII	Ball-and-field (inferior plan of search)
	XI	Ball-and-field (superior plan of search)
	XIII	Imagines reversal of hands of clock
No. 11 Body image	III	Giving sex (boy or girl)
	III	Pointing to parts of body
	VI	Distinguishing right & left (body parts)
No. 12 Practical information necessary to ordinary orientation	III	Giving the family name
	V	Naming colors
	V	Giving age
	VI	Forenoon and afternoon
	VI	Naming 4 coins
	VII	Naming the days of the week
	IX	Giving the date
	IX	Naming the months
No. 13 Use of numbers	IV	Counting 4 pennies
	VI	Counting 13 pennies
	VIII	Counting backwards 20 to 0
	IX	Counting the value of stamps
	IX	Making change
	XIII	Arithmetical reasoning

were no indications of superimposed organic pathology in the history. For the organic subjects, no member of the immediate family showed retardation, and at least one well recognized possible cause of organic brain damage was present in the history. These criteria are somewhat more rigorous than those proposed in the monograph by French et al. (2) but follow the same general line.

Twenty male subjects were obtained for each group. The number of Binet tests per subject ranged from between 1 and 10. The average number for the Familial group was 4.35, and for the Organic group it was 4.95. An average I. Q. and average chronological age was found for each subject. These were summed for each group as a whole. The mean chronological age for both Familials and Organics was 12.5 years. The mean I. Q. for the Familial group was 56.8 and for the Organic group it was 52.4. M. A. ranged from 4.3 to 9.3 for the Familials, and from 3.8 to 9.0 for the Organics. Chronological age ranged from 8.7 to 20.4 and from 7.8 to 21.9 for the Familials and Organics, respectively. Thus the two groups were fairly well matched. What advantage for producing skips there may be in a slightly greater range of M. A. and a slightly larger number of tests, lies with the Familial group, and hence should hinder rather than favor verification of the hypothesis.

C. Results:

The total number of skips, summed for all subjects, was 36 for the Familial group and 74 for the Organic group.[3] If we assume that by chance alone, the two groups should have an equal number of skips, then these results clearly differ significantly from chance. (Chi-square is 13.1, 1 d. f., $P < .01$. Since our prediction took into account the direction of the deviation, we are entitled to use Marks' (5) argument concerning "two-tailed distributions", and halve this P value, so that P becomes $< .005$). Obviously our hypothesis is verified; cases of mental deficit with organic etiology tend to show more intra-scale scatter than those with familial etiology.

This test of the hypothesis gave unequal weight to different individuals according to the number of skips they contributed to the group total. It is possible to use another measure with individuals as the unit. If we compare the number of people in each group

3. This analysis, by using frequencies composed of skips rather than individuals, raises the problem of the independence of each skip as a unit. However, other methods of analysis seem to involve even more questionable assumptions with respect to scaling and continuity.

having more than one skip with those having one or fewer skips, (the empirically 'best' dividing point) we have the following distribution:

	Familial	Organic
One or fewer skips:	11	3
More than one skip:	9	17

This distribution also deviates from chance in the predicted direction. (Chi-square is 5.38, $P < .05$, using Yates correction for small numbers; since direction of deviation was predicted, the P-value may again be halved, giving $P < .025$. Thus this measure also verifies the hypothesis. Table II shows the distribution of people in each group for each number of skips.

TABLE II

DISTRIBUTION OF SKIPS FOR THE TWO GROUPS

	Number of Skips									
	0	1	2	3	4	5	6	7	8	9
Familials for each number of skips:	6	5	2	3	2	2	0	0	0	0
Organics for each number of skips:	1	2	6	2	1	4	1	1	1	1

Not all of the sub-scales contribute equally to the sum total of intra-scale scatter. Scales 1, 4, 7, and 11 showed no skips at all. Scales 9 and 6 showed one skip each, both by Familial cases. There were two skips in scale 3, three in scale 9, and four in scale 13; these were divided equally between the two groups. The bulk of the intra-scale scatter was provided by scales 2, 5, 10, and especially 12. Table III shows the particular skips involved in each sub-scale and the number of people in each group giving each skip. Only items showing more than one skip are included.

A glance at the table shows that Familials had more skips than Organics on only two items. In six items the two groups are equal. For the remaining 21 items the Organics always produce more skips than the Familials, although the difference is never more than five. Thus it is clear that it is not merely a few highly differentiating items that create the total difference; the Organics display an overall tendency to produce more skips in these particular sub-scales.

TABLE III
NUMBER OF PEOPLE SHOWING EACH SKIP

'Skip' Items in Each Sub-Scale: *Passed*	*versus* *Failed*	Number of Skips per Group *Familial*	*Organic*
Sub-Scale No. 2:			
Gives two similarities	Gives differences	2*	5
Sub-Scale No. 3:			
Sees omissions in pictures	Discriminates forms	2	0
Discriminates forms	Compares lines	1	2
Sees omissions in pictures	Compares lines	0	2
Sub Scale No. 5:			
Fits triangles	Copies square	1	3
Copies diamond	Fits triangles	0	2
Remembers designs	Copies diamond	1	1
Sub-Scale No. 9:			
Comprehends others	Compreh. re obstacles	1	1
Sub-Scale No. 10:			
Three commissions	Aesthetic comparison	3	5
Sub-Scale No. 12:			
Tells own age	Names colors	1	2
Now A. M. or P. M.	Tells own age	2	4
Names coins	Tells own age	0	3
Knows days of week	Tells own age	1	1
Knows the months	Tells own age	0	1
Gives the date	Tells own age	0	1
Names coins	Names colors	1	2
Now A. M. or P. M.	Names colors	1	4
Knows days of week	Names colors	0	2
Gives the date	Names colors	0	1
Names coins	Now A. M. or P. M.	3	3
Knows days of week	Now A. M. or P. M.	2	1
Knows days of week	Names coins	5	8
Gives the date	Names coins	1	3
Knows the months	Names coins	0	4
Knows the months	Knows days of week	0	2
Gives the date	Knows days of week	0	4
Knows the months	Gives the date	3	4
Sub-Scale No. 13:			
Adds values of stamps	Counts backward 20-0	1	1
Makes change mentally	Adds values of stamps	1	1

* This figure would be interpreted to mean that two familial subjects passed the Yr. VIII item of giving similarities and failed the Yr. VII item of giving differences. The other entries have similar meaning.

D. Discussion:

The verification of the hypothesis demonstrated the worth of intra-scale scatter as a new method for research on subgroups in mental deficit. There is no reason why similar sub-scales could not be set up for the 1937 Stanford Binet; the Wechsler-Bellevue is inherently constructed to permit this sort of analysis, though the

order of difficulty of some items might need to be rearranged. We found that a single 1916 Binet test gave too few skips to be useful, but a set of several successive tests might not be necessary with the Wechsler or 1937 Binet since these tests are longer in themselves. However, it must be remembered that this method is *not meant as a diagnostic device for individuals* at this stage. If an a-typical sequence of passes is ultimately found to be characteristic of the Organic subgroup of mental defectives regardless of the test used, then it should be possible to set up a scale specially designed to test individuals in this respect. Such a scale might have real value for practical diagnosis.

From a theoretical standpoint, our cases of mental deficit with organic etiology behave very much like other brain-damaged groups in having wide scatter; we do not know whether Organic cases with normal intelligence would show still wider scatter. It must be remembered that the Familial's relative lack of skips reflects a *pattern* of test-passes similar to that of normal children, since the items of the Binet are assigned year levels on the basis of a normal sample. To determine the exact influence of scatter of intelligence versus organic brain damage, one should also use groups of non-retarded children, both brain damaged and normal, matched with our two groups for mental age. The literature indicates (3) that scatter is low in mental deficit, but high among organic patients, intelligence unspecified. The effects of intelligence and of organic damage might tend to cancel each other out to the point where the retarded brain injured children would resemble normal children. On that basis, if our measure of scatter is comparable to others, we would expect the following order of decreasing intra-scale scatter: a) normal intelligence with brain damage; b) normal intelligence without brain damage and defective intelligence with brain damage; c) defective intelligence without brain damage.

The causes of intra-scale scatter are debatable. Without further neurological knowledge we cannot say definitely that the brain structure in retardation of familial origin is relatively free from specific pathology while organic cases show neural defects. However, certain specific intellectual processes might be hindered in the organic cases while the deficit among the Familials, being homogenous, would hinder all intellectual processes equally.

Strauss (7) found that organic subjects with intellectual deficit tend to be more distractable than familial cases. Werner and Strauss (8) found their visual-motor performance to show more 'incoherence'. Distractability and a general impractical inattention to the daily environment among the organics might account for their larger number of skips with respect to information, (e. g. value of coins, names of colors) and orientation for time, (e. g. morning vs. afternoon, days of the week, age, etc.). Visual-motor 'incoherence', i. e. a tendency to perceive and articulate parts of figures incorrectly, might account for skips in gestalt perception (sub-scale No. 3) and visual-motor performance (sub-scale No. 5). However, the specific findings involve very small numbers. The length of each sub-scale and its homogeneity in terms of what is measured affects the number of skips to the point where interpretation of the meaning of the items involved is entirely speculative.

E. Summary and Conclusions:

According to most of the literature, patients with organic brain damage tend to show a high amount of test scatter while mentally defective children show low amounts of scatter. Traditional methods of scatter analysis involve total range of success, from the level of complete success to the level of complete failure, over dissimilar items, or differential success with one sort of item rather than another. As a new measure, within a set of relatively homogeneous items scaled for difficulty, if a subject passes the harder items and fails the easier ones, he may be said to show *intra-scale scatter*. This study tested the hypothesis that *intra-scale scatter would be higher among cases of mental deficit with organic etiology than among cases with familial etiology*. The items of the 1916 Binet were grouped into several sub-scales and instances of intra-scale scatter in successive tests for groups of familial vs. organic mental defectives were tabulated. The frequencies were compared by means of chi-square, and were found to *be significant in the direction predicted*. This suggests a) this new method for investigating scatter is worth trial as a research tool; b) in this respect cases of organic brain damage with mental deficit are similar to non-defective brain-injured patients, and can be differentiated as a group from mental defectives of familial etiology.

BIBLIOGRAPHY

1. DOLL, E. A. "Scattering" in the Binet-Simon tests. *Train. Sch. Bull.*, 1919, 6, 96-103.

2. FRENCH, E. L., CASSEL, R. H., ARBITMAN, H. D., WEISSENBERG, LILA, and IRWIN, F. W. A system for classifying the mentally deficient on the basis of anamnesis. *Train. Sch. Bull.*, 1950, 47, Supplement.

3. HUNT, J. McV. (Ed.) *Personality and the behavior disorders.* Vol. II. New York: The Ronald Press, 1944.

4. MCNEMAR, Q. *The revision of the Stanford-Binet scale.* New York: Houghton Mifflin Company, 1942.

5. MARKS, M. Two kinds of experiment distinguished in terms of statistical operations. *Psychol. Rev.*, 1951, 58, 179-184.

6. RAPAPORT, D. *Diagnostic psychological testing.* Chicago: The Year Book Publishers, Inc., 1945.

7. STRAUSS, A. A. Typology in mental deficiency. *Proc. Am. Ass. Ment. Def.*, 1939, 44, 85-90.

8. WERNER, H., and STRAUSS, A. A. Types of visuo-motor activity in their relation to low and high performance ages. *Proc. Am. Ass. Ment. Def.*, 1939, 44, 163-168.